$\varphi_b = 2,16rad$

d'où $u_b(t) = 7,32\sin(500\pi t + 2,16)$

6) a- $\varphi_u - \varphi_{u_c} = \frac{\pi}{2}$

$\varphi_{u_c} = \varphi_i - \frac{\pi}{2}$

$\Rightarrow \varphi_u - (\varphi_i - \frac{\pi}{2}) = \frac{\pi}{2} \Rightarrow \varphi_u - \varphi_i = 0$

$\Rightarrow u(t)$ *et* i(t) sont en phase : c'est la résonance d'intensité

b- $N_2 = N_0 = \frac{1}{2\pi\sqrt{LC}} = 329Hz$

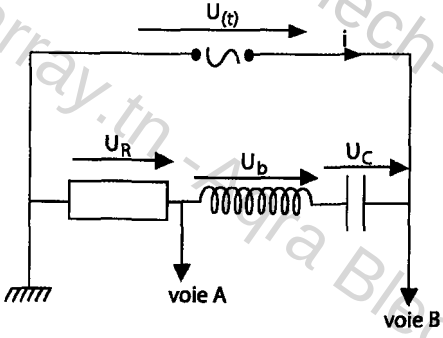
$I_{2m} = \frac{U_{C_m}}{R+r} = \frac{7,5}{17,55+50} = 11,1.10^{-2}A$

$Q = \frac{U_{C_m}}{U_m} = \frac{L\omega_0}{R+r} = \frac{5,83.10^{-2} \times 2\pi \times 329}{50+17,55} = 1,78$

$P = (R+r)I_{2eff}^2 = (50+17,55)\left(\frac{11,1.10^{-2}}{\sqrt{2}}\right)^2 = 4,16.10^{-3}w$

4

1) a-



b- voir schéma

2) a- Loi des mailles : $u_R + u_b + u_C - u = 0$

$(R+r)i + L\frac{di}{dt} + \frac{1}{C}\int idt = u(t)$

Qarray.tn Aqra Blech- Qarray.tn